

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

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30 MAY 2005

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

REQU/RECEIVED

Date of mailing 26 May 2005 (26-05-2005)
(day/month/year)

Applicant's or agent's file reference
08241-185

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/CA2005/000220

International filing date (day/month/year)
18 February 2005 (18-02-2005)

Priority date (day/month/year)
18 February 2004 (18-02-2004)

International Patent Classification (IPC) or both national classification and IPC
IPC 7 G10L-19/04, G10L-19/12

Applicant
VOICEAGE CORPORATION ET AL

1. This opinion contains indications relating to the following items :

- | | |
|--|---|
| <input checked="" type="checkbox"/> Box No. I | Basis of the opinion |
| <input type="checkbox"/> Box No. II | Priority |
| <input type="checkbox"/> Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input checked="" type="checkbox"/> Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement. |
| <input type="checkbox"/> Box No. VI | Certain documents cited |
| <input type="checkbox"/> Box No. VII | Certain defects in the international application |
| <input checked="" type="checkbox"/> Box No. VIII | Certain observations on the international application |

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/CA
Canadian Intellectual Property Office
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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/CA2005/000220

Box No. 1 **Basis of this opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

[] This opinion has been established on the basis of a translation from the original language into the following language
_____, which is the language of a translation furnished for the purposes of international search
(under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of :
 - a. type of material
 - [] a sequence listing
 - [] table(s) related to the sequence listing
 - b. format of material
 - [] in written format
 - [] in computer readable form
 - c. time of filing/furnishing
 - [] contained in the international application as filed.
 - [] filed together with the international application in computer readable form.
 - [] furnished subsequently to this Authority for the purposes of search.
3. [] In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statement that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments :

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has :

☐ paid additional fees

☐ paid additional fees under protest

☒ not paid additional fees

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

☐ complied with

☒ not complied with for the following reasons :

There are 4 different inventions claimed as follows:

Group A - claims 1-34

This group of claims is directed to a method and device for low-frequency emphasizing the spectrum of a sound signal comprising the steps of calculating a maximum energy of a block, calculating a factor for each block having a position index smaller than the position index of the block with maximum energy comprising the steps of computing an energy of the block, computing the factor from the calculated maximum energy and the computed energy of the block, wherein for each block a gain is determined from the factor.

Group B - claims 35-53

This group of claims is directed to a method and device for high frequency coding comprising the steps of performing LPC analysis on LF and HF signals, calculating an estimation of an HF matching gain, calculating the energy of the HF signal, processing the LF signal to produce a synthesized version of the HF signal, calculating the energy of the synthesized HF signal, calculating a ratio between the calculated energy and the synthesized version of the HF signal to obtain an HF compensating gain, calculating a difference between the estimation of the HF matching gain and the HF compensating gain to obtain a gain correction.

Group C - claims 54-66

This group of claims is directed to a method and device for decoding an HF signal comprising the steps of receiving the coded HF signal, extracting LPC coefficients and a gain correction from the coded HF signal, calculating an estimation of the HF gain from the extracted LPC coefficients, adding the gain correction to the calculated estimation of the HF gain to obtain an HF gain, amplifying a LF excitation signal by the HF gain producing a HF excitation signal, and processing the HF excitation to produce a synthesized version of the HF signal.

Group D - claims 67-92

This group of claims is directed to a method and device for switching between two sound signal coding modes wherein the sound signal is filtered to produce a weighted signal comprising the steps of calculating a zero-input response of the weighting filter; windowing the zero-input response so that the zero-input response has an amplitude monotonically decreasing to zero, and in the current frame, removing the windowed zero-input response from the weighted signal.

4. Consequently, this opinion has been established in respect of the following parts of the international application :

☐ all parts

☒ the parts relating to claim Nos. 1-34

Box No. V Reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-34	YES
	Claims	none	NO
Inventive step (IS)	Claims	1-34	YES
	Claims	none	NO
Industrial applicability (IA)	Claims	1-34	YES
	Claims	none	NO

2. Citations and explanations :

D1 - US 6,266,632 B1 (Kato et al) 24 July 2001

D1 is considered the most relevant prior art. D1 disclose speech decoding method and apparatus wherein a gain parameter is corrected according to an energy of a speech signal. An energy extractor extracts an energy value corresponding to an excitation index, an energy value decision section decides whether the energy value is within a predetermined range (defined by an upper and lower limit), and gain control is performed on the signal when it falls within the predetermined range.

Claims 1-34 appear to be novel and involve an inventive step (Articles 33(2) and 33(3) PCT) since none of the prior art calculates a factor for each block, having a position index smaller than a position index of a block with maximum energy, wherein the factor is a function of the energy in each block and the energy of the block with maximum energy.

Claims 1-34 have industrial applicability (Article 33(4) PCT).

Box No. VIII **Certain observations on the International application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made :

Claims 1, 13, 14 lack clarity (article 6 PCT). The expression "having a position index" is too vague, it is not clear if the blocks are indexed within a frame, or a table, etc.